

WHAT IS CLAIMED IS:

1. A method for metered injection of a fluid packet, comprising:
 pressurizing a vessel containing the packet to a pressure less than or equal to a
 hold-off pressure; and
 subjecting the packet to an extraction force to extract the packet from the
 vessel onto a surface.
2. The method of claim 1, wherein the extraction force comprises dielectrophoresis.
3. The method of claim 1, wherein the extraction force comprises magnetophoresis.
4. The method of claim 1, wherein the extraction force is produced by an electrode.
5. The method of claim 4, wherein the electrode is coupled to the surface.
6. The method of claim 1, wherein the extraction force is produced by an electrode array.
7. The method of claim 1, wherein the vessel comprises a flow-through injector.
8. The method of claim 1, wherein the pressure is between 65% and 85% of the holdoff pressure.
9. The method of claim 8, wherein the pressure is between 75% and 85% of the holdoff pressure.
10. The method of claim 8, wherein the size of the packet is electronically controlled.
11. The method of claim 1, further comprising removing the packet from the surface through an exit port.

12. The method of claim 11, wherein there are two or more exit ports.
13. The method of claim 11, wherein the exit port is coupled to a conventional fluidics device.
14. The method of claim 1, further comprising the metered injection of two or more fluid packets from two or more pressurized vessels.
15. The method of claim 14, further comprising using a switching pump, wherein the switching pump switches the extraction force between a first packet in a first pressurized vessel and a second packet in a second pressurized vessel.
16. A method for metered injection of a fluid packet, comprising:
pressurizing a vessel containing the packet to a pressure less than or equal to a hold off pressure, the packet comprising a first dielectric material;
energizing one or more electrodes coupled to a surface adjacent the vessel, the surface including a fluid comprising a second dielectric material;
subjecting the packet to an extraction force from the one or more electrodes to extract the packet from the vessel onto a surface.
17. An apparatus for injecting a fluid packet onto a surface, the apparatus comprising:
a vessel configured to contain the packet;
a pressure manifold coupled to the vessel;
a pressure reservoir coupled to the manifold and configured to pressurize the vessel to a pressure less than or equal to a hold off pressure; and
a device capable of generating a programmable extraction force, the extraction force being configured to extract the packet from the vessel onto the surface.
18. The apparatus of claim 17, further comprising two or more pressure reservoirs.

19. The apparatus of claim 17, wherein the vessel comprises a flow-through injector.
20. The apparatus of claim 17, wherein the device capable of generating a programmable extraction force is an electrode array.
21. An apparatus for moving a fluid packet, the apparatus comprising:
a vessel configured to contain the packet;
a pressure manifold coupled to the vessel;
a pressure reservoir coupled to the manifold and configured to pressurize the vessel to a pressure less than or equal to a hold off pressure;
a device capable of generating a programmable extraction force, the extraction force being configured to extract the packet from the vessel onto a surface;
an exit port coupled to the surface and configured to receive the packet.
22. The apparatus of claim 21, wherein the exit port is hydrophilic.
23. The apparatus of claim 21, comprising a plurality of exit ports.
24. The apparatus of claim 21, further comprising a conventional fluidics device coupled to the exit port.
25. The apparatus of claim 21, wherein the vessel comprises a flow-through injector.
26. The apparatus of claim 21, wherein there are two or more pressurized vessels.
27. The apparatus of claim 26, further comprising using switching pump, wherein the switching pump is configured to switch the extraction force between a first packet in a first pressurized vessel and a second packet in a second pressurized vessel.